

**REMARKS**

This responds to the Office Action mailed on April 19, 2004.

Claims 1, 8, and 13 and withdrawn claims 30 and 33 are amended, no claims are canceled, and no claims are added; as a result, claims 1-35 are now pending with claims 1-15 currently pending examination in this application. The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Support for the amendments to claim 1 and withdrawn claims 30 and 33 can be found, for example, in the specification on page 6, lines 12-15 and page 7, lines 8-10.

Claims 8 and 13 are amended to adhere to the language of claim 1, from which they depend.

**§103 Rejection of the Claims**

Claims 1-15 were rejected under 35 USC § 103(a) as being unpatentable over Chu et al. (U.S. Publication No. 2003/0002797) in view of Jestel et al. (U.S. Patent No. 5,396,328) and Hunsperger (U.S. Patent No. 3,952,265). Applicant traverses these grounds of rejection of these claims.

Applicant reserves the right to swear behind Chu et al. (hereafter Chu) at later date. Nevertheless, Applicant submits that the claims 1-15 are distinguished over Chu in view of Jestel et al. (hereafter Jestel) and Hunsperger.

Chu deals with an optical logic device that may use a multi-mode interference (MMI) device. *See, Chu, paragraph [0009].* Jestel deals with an interferometer including using two photodetectors to process light with the aid of evaluation electronics. *See Jestel, column 5, lines 55-57.* Thus, since Chu's logic device does not use evaluation electronics, motivation to combine Chu with Jestel appears to be lacking. Further, since Chu deals with optical logic devices, combining the photodetectors of Jestel with Chu as proposed in the Office Action would defeat the purpose of Chu. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to

make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); MPEP § 2143.01.

Further, Applicant can not find in the combination of Chu, Jestel, and Hunsperger a teaching or suggestion of an array of detector waveguides optically coupled to an MMI cavity, where each detector waveguide includes a waveguide and an intrinsic region that is disposed underneath a lower surface of the waveguide and surrounded by first and second electrodes, where the core of the waveguide is longitudinally aligned along the intrinsic region as recited in claim 1, as amended. The Office Action cited Chu as a disclosure of a multi-mode interference (MMI) device having an optically coupled input and an optically coupled output, cited Jestel as a disclosure of an optically coupled array detector, and cited Hunsperger as a disclosure regarding using silicon and/or germanium in an intrinsic region. Even if combined, the combination appears to lack either a teaching or a suggestion of a detector waveguide with a core longitudinally aligned along an intrinsic region surrounded by two electrodes as recited in claim 1. Therefore, Applicant submits that the Office Action's proposed combination of Chu in view of Jestel and Hunsperger does not teach or suggest all of the elements as recited in claim 1.

Thus, Applicant submits that, for at least the reasons state above, Chu in view of Jestel and Hunsperger does not establish a proper *prima facie* case of obviousness with respect to claim 1. Claim 1 is patentable over Chu in view of Jestel and Hunsperger. Claims 2-15 depend on claim 1 and are patentable over Chu in view of Jestel and Hunsperger for at least the reasons stated above and further in view of the additional elements of these dependent claims.

Applicant respectfully requests withdrawal of the rejections of claims 1-15, and reconsideration and allowance of these claims.

Withdrawn Claims

Original independent claims 30 and 33 contained the waveguide photodetector elements of original claim 1, and are amended to contain the elements of claim 1, as amended. Claims 31 and 32, and claims 34 and 35 depend on claims 30 and 33, respectively. Upon the allowance of claim 1, Applicant respectfully requests the rejoinder and allowance of claims 30-35. *See M.P.E.P. 809.*

*Assertion of Pertinence*

Applicant has not responded to the assertion of pertinence stated for the patents cited, but not relied upon, by the Office Action since these patents are not relied upon as part of the rejections in this Office Action. Applicant is expressly not conceding they have any pertinence and reserves the right to respond more fully should any of them form a part of some future rejection.

*Conclusion*

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney ((612) 371-2157) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date 30 June 2004

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 30 day of June 2004.

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Signature